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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for forming an active catalyst from a used, hydrocarbon containing, supported catalyst comprising one or more members selected from the group consisting of Co, Ni, Cu, Ru, Rh, Re, Pd, Pt, Os and Ir, the process comprising the following steps:

a) decreasing the hydrocarbon content of the used catalyst to produce a low hydrocarbon content catalyst;

b) impregnating the low hydrocarbon ~~from~~ content catalyst under a non-oxidative atmosphere with a solution of at least one of an ammonium salt and an alkyl ammonium salt, optionally in combination with up to about five moles of ammonia per liter of solution ~~to produce an impregnated catalyst~~;

c) oxidizing the ~~impregnated~~ catalyst of step b with a gaseous oxidant in the presence of the impregnating solution to produce an oxidized catalyst; and

d) reducing the oxidized catalyst with a hydrogen-containing gas at elevated temperatures thereby forming an active catalyst.

2. (Original) A process in accordance with Claim 1, wherein the hydrocarbon content of the used catalyst is decreased by at least one of the following steps:

contacting with a hydrogen-containing gas at elevated temperatures;

contacting with a solvent or supercritical fluid;

contacting with a solvent or supercritical fluid and then contacting with a hydrogen-containing gas at elevated temperatures;

contacting the catalyst with an oxygen-containing gas or steam at elevated temperatures and then contacting it with a hydrogen-containing gas at elevated temperatures; and

contacting with a solvent or supercritical fluid, contacting with an oxygen-containing gas or steam at elevated temperatures and then contacting with a hydrogen-containing gas at elevated temperatures.

3. (Original) A process in accordance with Claim 1, wherein step a) additionally includes the step of drying the catalyst.

4. (Original) A process in accordance with Claim 1, wherein amount of said salts in the impregnating solution in step b) is less than an amount that would be required to convert substantially all of said at least one catalyst metal to its corresponding salts.

5. (Original) A process in accordance with Claim 1, wherein the ammonium salt or alkyl ammonium salt in the impregnating solution in step b) is selected from the group consisting of nitrate, carbonate and carboxylates.

6. (Original) A process in accordance with Claim 5, wherein the ammonium salt or alkyl ammonium salt in the impregnating solution in step b) is selected from the group consisting of nitrate, acetate, citrate, formate and carbonate.

7. (Original) A process in accordance with Claim 1, wherein the impregnating solution in step b) contains ammonia and the concentration of ammonia is chosen according to the following equation:

$$[NH_3] / (n \cdot [(NH_4^+)_nX]) \leq 1$$

wherein X is the anion of the salt, n is the charge of the anion of the salt and the bracketed terms are concentrations expressed in moles per liter of the impregnating solution.

8. (Original) A process in accordance with Claim 1, wherein step c) additionally includes the step of drying the catalyst.

9. (Original) A process in accordance with Claim 1, wherein the gaseous oxidant in step c) is selected from the group consisting of oxygen, air, ozone and nitrogen oxides.

10. (Original) A process in accordance with Claim 1, wherein the amount of said impregnating solution utilized in step b) is from about 10% to 1,000% of the calculated pore volume of the catalyst.

11. (Original) A process in accordance with Claim 10, wherein the amount of said impregnating solution utilized in step b) is from about 30% to 200% of the calculated pore volume of the catalyst.

12. (Original) A process in accordance with Claim 1, wherein the temperature during the oxidation in step c) is maintained below about 100°C.

13. (Original) A process in accordance with Claim 1, wherein the reduction in step d) is with hydrogen-containing gas at a temperature of from about 200°C to 600°C.

14. (Original) A process in accordance with Claim 1 additionally including the step of calcining under an oxidant-containing atmosphere between steps c) and d).

15. (Original) A process in accordance with Claim 14, wherein the oxidant-containing atmosphere is air.

16. (Original) A process in accordance with Claim 14, wherein the oxidant-containing atmosphere contains from about 10 ppm to about 21% by volume of oxygen with the remainder being a non-oxidative gas.

17. (Original) A process in accordance with Claim 1 additionally including the step of passivating the catalyst formed in step d) by:

treatment with a carbon monoxide-containing gas under conditions such that the carbon monoxide is not significantly decomposed; or

treatment with a gas containing carbon monoxide and hydrogen under conditions such that the carbon monoxide is not significantly hydrogenated.

18. (Original) A process in accordance with Claim 1, wherein said catalyst comprises cobalt.

19. (Currently Amended) A process for forming an active catalyst from a used, hydrocarbon containing supported catalyst comprising one or more members selected from the group consisting of Co, Ni, Cu, Ru, Rh, Re, Pd, Pt, Os and Ir, the process comprising the following steps:

a) decreasing the hydrocarbon content of the used catalyst by one or more of the following steps:

i) contacting it with a hydrogen-containing gas at elevated temperatures;

ii) contacting it with a solvent or supercritical fluid;

iii) contacting it with a solvent or supercritical fluid and then contacting with a hydrogen-containing gas at elevated temperatures;

iv) contacting it with an oxygen-containing gas or steam at elevated temperatures and then contacting it with a hydrogen-containing gas at elevated temperatures; and

v) contacting it with a solvent or supercritical fluid, contacting with an oxygen-containing gas or steam at elevated temperatures and then contacting with a hydrogen-containing gas at elevated temperatures;

whereby a low hydrocarbon content catalyst is obtained;

b) impregnating the low hydrocarbon content catalyst under a non-oxidative atmosphere with a solution of at least one of an ammonium salt and an alkyl ammonium salt, optionally in combination with up to about five moles of ammonia per liter of solution ~~to form an impregnated catalyst~~;

c) oxidizing the ~~impregnated~~ catalyst of step b with a gaseous oxidant in the presence of the impregnating solution to form an oxidized catalyst; and

d) reducing the oxidized catalyst with a hydrogen-containing gas at elevated temperatures thereby forming an active catalyst.

20. (Currently Amended) A supported metal catalyst for the catalytic hydrogenation of carbon monoxide comprising one or more members selected from the group consisting of Co, Ni, Cu, Ru, Rh, Re, Pd, Pt, Os and Ir, said catalyst being formed from a used, hydrocarbon contains catalyst by a process comprising:

a) decreasing the hydrocarbon content of the used catalyst to form a low carbon content catalyst;

b) impregnating the low carbon content catalyst under a non-oxidative atmosphere with a solution of at least one of an ammonium salt and an alkyl ammonium salt, optionally in combination with up to about five moles of ammonia per liter of solution ~~to produce an impregnated catalyst~~;

c) oxidizing the ~~impregnated~~ catalyst of step b with a gaseous oxidant in the presence of the impregnating solution to form an oxidized catalyst; and

d) reducing the oxidized catalyst with a hydrogen-containing gas at elevated temperatures thereby forming an active catalyst.

21. (Currently Amended) A supported metal catalyst for the catalytic hydrogenation of carbon monoxide comprising one or more members selected from the group consisting of Co, Ni, Cu, Ru, Rh, Re, Pd, Pt, Os and Ir, said catalyst being

formed from a used, hydrocarbon containing, catalyst by a process comprising the following steps:

a) decreasing the hydrocarbon content of the used catalyst by one or more of the following steps:;

i) contacting it with a hydrogen-containing gas at elevated temperatures;

ii) contacting it with a solvent or supercritical fluid;

iii) contacting it with a solvent or supercritical fluid and then contacting with a hydrogen-containing gas at elevated temperatures;

iv) contacting it with an oxygen-containing gas or steam at elevated temperatures and then contacting it with a hydrogen-containing gas at elevated temperatures; and

v) contacting with a solvent or supercritical fluid, contacting with an oxygen-containing gas or steam at elevated temperatures and then contacting with a hydrogen-containing gas at elevated temperatures;

whereby a catalyst of reduced hydrocarbon content is obtained;

b) impregnating the reduced hydrocarbon content catalyst under a non-oxidative atmosphere with a solution of at least one of an ammonium salt and an alkyl ammonium salt, optionally in combination with up to about five moles of ammonia per liter of solution ~~to form an impregnated catalyst~~;

c) oxidizing the ~~impregnated~~ catalyst of step b with a gaseous oxidant in the presence of the impregnating solution to form an oxidized catalyst; and

d) reducing the oxidized catalyst with a hydrogen-containing gas at elevated temperatures thereby forming an active catalyst.

22. (Original) A process for producing C_{10+} hydrocarbons by the hydrogenation of carbon monoxide by reaction with hydrogen at reaction conditions in the presence of a renewed catalyst according to Claim 20.

23. (Original) A process in accordance with Claim 22, wherein at least a portion of the hydrocarbons formed are upgraded to more valuable products by at least one of fractionation and conversion operations.

24. (Original) A process for producing C_{10+} hydrocarbons by the hydrogenation of carbon monoxide by reaction with hydrogen at reaction conditions in the presence of a renewed catalyst according to Claim 21.

25. (Original) A process in accordance with Claim 24, wherein at least a portion of the hydrocarbons formed are upgraded to more valuable products by at least one of fractionation and conversion operations.